

What is claimed is:

1. A throttle device comprising a throttle body with an air-intake passage, a throttle valve for controlling the opening of said air-intake passage, and a motor for driving
5 said throttle valve;

said throttle device further comprising:

a motor casing which is molded integrally together with said throttle body and houses a motor body of said motor;

a portion which is on an output-shaft side of said motor
10 body and restrained in its radial direction in the vicinity of a motor-insertion opening of said motor casing;

a portion which is on opposite side to the output-shaft side of said motor body and provided with projections; and

said projections formed in a single piece together with
15 said motor body or attached to said motor body;

wherein said projections are deformed inwardly in a radial direction of said motor body by being pressed down by an inner surface of said motor casing so that said portion opposite to the output-shaft side in said motor body is held in its radial
20 direction in said motor casing.

2. A throttle device comprising a throttle body with an air-intake passage, a throttle valve for controlling the opening of said air-intake passage, and a motor for driving
25 said throttle valve;

said throttle device further comprising:

a motor casing which is molded integrally together with said throttle body and houses a motor body of said motor;

a portion which is on an output-shaft side in said motor
5 body and restrained in its radial direction in the vicinity of a motor-insertion opening of said motor casing; and

a portion which is on opposite side to the output-shaft side in said motor body and provided with plural bent pieces or lugs arranged in a circumferential direction of said motor
10 body;

wherein said bent pieces or lugs are deformed inwardly in a radial direction of said motor body by being pressed down at a deep recess-portion of said motor casing by an inner surface of said motor casing so that said portion opposite to the
15 output-shaft side in said motor body is held in its radial direction in said motor casing.

3. The throttle device according to claim 1, wherein said projections are elastic projections.

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4. The throttle device according to claim 1, wherein two or more said projections are arranged in a circumferential direction of said motor body.

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5. The throttle device according to claim 2, wherein

two or more said bent pieces or lugs are formed in a single piece together with a component of said motor or formed so as to be attachable to said motor body, and they are arranged in a circumferential direction of said motor body.

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6. The throttle device according to claim 1 or 2 further comprising a motor guide formed in the vicinity of the motor-insertion opening of said motor casing;

wherein the portion on the output-shaft side in said motor body is designed so as to be clearance-fitted into an inner surface of said motor guide before said motor is fully inserted into said motor casing, and the portion on the output-shaft side in said motor body is restrained in its radial direction by said motor guide.

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7. The throttle device according to claim 1 or 2 further comprising a motor guide formed in the vicinity of the motor-insertion opening of said motor casing;

wherein a motor-mounting flange on the output-shaft side of said motor body is designed so as to be clearance-fitted into an inner face of said motor guide, and the portion on the output-shaft side of said motor body is restrained in its radial direction by said motor guide.

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8. The throttle device according to claim 2 further

comprising a taper which is formed on at least a part of the inside surface of said motor casing so as to taper down from a motor insertion side toward a side opposite to said motor insertion side;

5 wherein said bent pieces or lugs have respectively curved outer surfaces, and said curved outer surfaces come into contact with said taper of said motor casing so that said bent pieces or lugs are pressed down.

10 9. A throttle valve driving motor comprising projections formed in one-single piece together with a component of a motor body or attached to said motor body,

 wherein said projections is arranged on a portion opposite to an output-shaft side in said motor body and capable
15 of contacting with pressure and its deformation to an inside surface of a motor casing for housing a motor body of said motor.

 10. The throttle valve driving motor according to claim
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20 wherein said projections are flexibly deformable projections and formed in one-single piece together with a bearing bracket or a yoke on the side opposite to the output-shaft side of said motor.

25 11. The throttle valve driving motor according to claim

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wherein said projections comprise plural bent pieces which are arranged on outer circumference of a bearing bracket at a portion opposite to the output-shaft side of said motor body by sheet-metal working; and

wherein a yoke of said motor is provided with notches for receiving said bent pieces when they are elastically deformed.

12. The throttle valve driving motor according to claim

10 9,

wherein said projections are plural rugs by cutting and raising locally a yoke of said motor and arranged in a circumferential direction of said motor body.

13. The throttle valve driving motor according to claim 9, wherein said projections are formed on a ring attached to an outer circumference of a yoke of said motor body.

14. The throttle valve driving motor according to claim 9, wherein said projections are formed on a ring attached to an outer circumference of a bearing boss of said motor body.